

A CONFIGURABLE ALL-DIGITAL COHERENT DEMODULATOR SYSTEM FOR  
SPREAD SPECTRUM APPLICATIONS

ABSTRACT OF THE DISCLOSURE

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A configurable all-digital coherent demodulator system for spread spectrum digital communications is disclosed herein. The demodulator system includes an extended and long code demodulator (ELCD) coupled to a traffic channel demodulator (TCD) and a parameter estimator (PE). The demodulator also includes a pilot assisted correction device (PACD) that is coupled to the PE and the TCD. The ELCD provides a code-demodulated signal to the TCD and the PE. In turn, the TCD provides a demodulated output data signal to the PE. The PACD corrects the phase error of the demodulated output data based on an error estimate that is fed forward from the PE. Accumulation operations in the ELCD, TCD, and PE are all programmable. Similarly, a phase delay in the PACD is also programmable to provide synchronization with the error estimate from the PE.

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